

Financing pro-poor entrepreneur-based innovation : a review of existing literature

Citation for published version (APA):

Sonne, L. (2010). *Financing pro-poor entrepreneur-based innovation : a review of existing literature*. UNU-MERIT, Maastricht Economic and Social Research and Training Centre on Innovation and Technology. UNU-MERIT Working Papers No. 038

Document status and date:

Published: 01/01/2010

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.umlib.nl/taverne-license

Take down policy

If you believe that this document breaches copyright please contact us at:

repository@maastrichtuniversity.nl

providing details and we will investigate your claim.



UNITED NATIONS
UNIVERSITY

UNU-MERIT

Working Paper Series

#2010-038

Financing pro-poor entrepreneur-based innovation: A review of existing literature

Lina Sonne

Financing pro-poor entrepreneur-based innovation: A review of existing literature

Lina Sonne*

UNU-MERIT

Abstract

That innovation and entrepreneurship are important for poverty alleviation and development is well established. However, despite a general agreement that finance affects growth and development by supporting innovative activities in the economy, little has been written specifically on how pro-poor entrepreneur-based innovation in rural areas should be financed. This review explores the literature relevant to understanding financing of pro-poor innovation and entrepreneurship, and shows that financial theories are moving from linear supply-led subsidised credit approaches towards new, more systemic perspectives. These include theories on financial systems theories, microfinance, and financial access and inclusion. This review notes that a theoretical and policy gap exists as regards financing of pro-poor entrepreneur-based innovation in rural areas.

Keywords: Pro-poor finance, finance innovation, finance entrepreneurship, financial innovation, rural finance

JEL Codes: O16, O18, O31, R51

The views expressed in this paper are those of the author and do not necessarily reflect those of UNU-MERIT. I am grateful to Robin Cowan for helpful suggestions and comments.

* UNU-MERIT, Keizer Karelplein 19, 6211 TC, Maastricht, The Netherlands, email: sonne@merit.unu.edu

UNU-MERIT Working Papers
ISSN 1871-9872

**Maastricht Economic and social Research and training centre on Innovation and Technology,
UNU-MERIT**

UNU-MERIT Working Papers intend to disseminate preliminary results of research carried out at the Centre to stimulate discussion on the issues raised.

1. Introduction

Innovation is central to economic development (Edquist, 1997, Freeman, 1987, Hall et al., 2003, Lundvall, 1992, Spielman, 2005).¹ Of particular interest in developing countries is rural innovation since it is in rural areas that most of the poor live (WB, 2008).² Whilst previous rural development theory, including innovation-related policy, has focussed on small-holder agriculture, the fact is that most rural poor are landless poor and therefore unlikely to benefit directly from agriculture-based policies. Instead, pro-poor innovation in rural areas is more likely to occur through small-scale ventures and entrepreneurs than industrial research and development. Entrepreneurship, in other words, plays a major role.³

One of the vital factors influencing and supporting entrepreneurship is finance. In fact, together with a level playing field provided by appropriate and fair regulations and laws, and access to human capital, access to finance constitutes the pillars of entrepreneurship (UNDP, 2004).⁴ It is clear that finance has a direct poverty alleviating effect as access to finance for entrepreneurs results in employment and wages for the poor and access to better products and services (Demirguc-Kunt et al., 2008). In fact Beck and Demirguc-Kunt (2008) note that

“pro-poor financial sector policy needs a broader focus than access for the poorest and that improving access by the excluded non-poor micro and small entrepreneurs can have a strongly favourable indirect effect on the poor” (2008:385).

However, despite a general agreement that finance affects growth by supporting innovative activities in the economy (Levine, 2004), little has been written specifically on how pro-poor entrepreneur-based innovation in rural areas should be financed.⁵

This paper explores financing theories pertaining to pro-poor innovation and entrepreneurship in more detail. As a starting point, the next section will look at the classical

¹ Here innovation is defined as the continuous process of upgrading using new knowledge or the new combination of existing knowledge, that is new to the local area (Hall, 2003; Spielman, 2005). The innovation process thus emerges from a system of actors whose interactions, behaviour and patterns of learning are conditioned by institutions (Freeman, 1987; Lundvall, 1992; Edquist, 1997).

² As noted in the World Development Report (2008) which is focussed on rural and agricultural development through innovation.

³ Most rural poor are entrepreneurs out of necessity (Lingelbach et al., 2005) and therefore unlikely to have the capacity or willingness to take on risks associated with scaling up to make a real impact on the rural economy. A few, generally those that are relatively less poor, are opportunity entrepreneurs pursuing a profitable business, innovating and a looking to grow. These growth focused entrepreneurs (Lazonick, 2005) are likely to have a large indirect effect on the poor by providing employment opportunities as well as improved good and service. This paper therefore takes the view that these growth-focused but socially relevant entrepreneurs that are engaged in pro-poor entrepreneur-based innovation (PEBI) are essential to the continuous development of, and poverty alleviation in, rural areas by creating employment, increasing income and providing improved goods and services.

⁴ The other pillars being a level playing field provided by fair laws and regulations and access to human capital according to UNDP (2004).

⁵ Much has of course been written about rural finance in general (Adams, 2004; Von Pischke, 1991; Zeller, 2003) and recently about micro finance in particular (Robinson, 2001; Helms, 2006).

supply-led financial theories before moving on to theories that have emerged more recently related to, in turn, microfinance, financial systems and financial access and inclusion. Lastly there will be some concluding remarks on the theoretical landscape regarding financing pro-poor entrepreneur-based innovation in rural areas.

2. Supply-led Finance: Dominating Neo-Classical View

Economists in the post war years like Lewis, Higgins and Leibenstein drew direct parallels between availability of entrepreneurial facilities, knowledge and credit on the one hand and increased income per head on the other (Penny, 1968). They suggested that farmers needed more capital than they could save from income, and that credit would be necessary in small agriculture and industry (Penny, 1968). This complemented the small-but-efficient paradigm (Schultz, 1964) where farmers were considered the engine of growth, and where agriculture-related innovation could be induced.

In this supply-led theory, finance was considered a means to induce innovation, as a form of input. (Patrick, 1966) for example conveyed the idea that economic growth and development could be encouraged through interventions in the financial system by supplying finance in advance of demand. These supply-leading financial theories came to dominate rural finance for several decades. Patrick (1966) suggested that

“supply-leading finance has two functions: to transfer resources from traditional or non-growth sectors to moderns sectors and to promote and stimulate entrepreneurial responses. Access to supply-leading funds opens new horizons, enabling the entrepreneur to ‘think big’” (Patrick, 1966:51).

It follows that if subsidised credit was provided to the agriculture sector, farmers would be induced, or spurred, to buy new and more efficient technology, such as tractors, which would have a positive impact on economic growth and development. Credit programmes⁶ were expected to help the rural poor increase agricultural production (and thus growth) not only by giving them the opportunity to purchase new technology but also by compensating farmers for the government prices and policies that were having a detrimental effect on their earnings (Adams et al., 1984:1). The result of this ‘directed credit’ approach was expected to be increased food production at a time when the world was facing a severe food crisis.

A further assumption underlying the need for government intervention and funding of subsidised credit programmes was that ‘bad moneylenders’ that were providing the majority of finance in rural areas, would charge usurious rates. Therefore, formal financial institutions needed to be created that could provide credit at a better rate for the rural poor (Von Pischke et al., 1983). Providing credit was ultimately seen to be the responsibility of governments and international donors, either directly or through financial institutions. Internationally, USAID’s

⁶ Empirically, credit programmes stem from discussions of surveys such as the All India Rural Credit Survey in 1951 followed by a conference on the agricultural credit in the US a year later (Von Pischke 1983).

predecessor was pioneering in providing rural credit for farmers in the 1950's followed by the Inter-American Development Bank and the World Bank. The UN's Food and Agriculture Organisation supported programmes with information dissemination and technical support (Von Pischke et al., 1983:2-3). National governments of low income countries quickly adopted the credit programmes, which proliferated in the 1960's and 70's, with the arrival of new technologies and the Green Revolution, in particular in Asia.

Nevertheless, fierce criticism of the narrow supply-led finance theories and credit programmes surfaced almost before they had even developed. As early as 1952 Galbraith pointed out that credit programmes can be a means of stagnation and repression as well as progress, and in the same year Li wrote that farmers should have reached a certain level of development before taking part in credit programmes (Galbraith, 1952 and Li, 1952 cited in Penny, 1968:32-33). Furthermore, Mellor (1966) argued that credit programmes would serve their clients better by being provided alongside or after the implementation of technology improvement programmes, rather than being supplied in advance (Mellor, 1996 in Penny, 1968). In fact, according to Penny (1968),

"Galbraith, Li and Mellor are right, and the government rural credit programmes will remain ineffective until governments come to a better understanding of a) the role of credit in peasant economies and b) the attitudes of peasant farmers towards savings, investments and debt" (Penny, 1968:33).

Penny argued in his 1968 paper that much of the literature on the need for credit programmes is based on faulty or untested assumptions, and he showed through studies of credit programmes in Indonesia that credit will not be efficient unless a certain level of development among farmers has already taken place. Nevertheless, despite early criticisms, the major turning point only came with the USAID's Spring Review of Small Farmer Credit of 1972-73. The review surveyed a large number of credit programmes and severely criticised the model. Credit programmes continued to be heavily criticised as the approach failed according to empirical and theoretical evidence:

Firstly, the credit programmes were meant to make capital available to small-scale farmers and producers. However, instead larger producers gained increased access to credit whilst the smaller producers actually had even less access after the implementation of credit programmes (Gonzalez-Vega, 1984:131, Vogel, 1984:133). The nature of rural credit discriminates against the poor, since larger loans are, overall, cheaper and transaction costs as a proportion of the total cost is a much smaller burden for relatively better off borrowers (Blair, 1984:183).

Secondly, the fungibility⁷ of credit means that it is difficult to control what exactly the credit is used for, whether it is used for the intended purpose and what the impact of the credit is (Adams et al., 1984:75). The credit programmes were infeasible because of the very nature of credit (Von Pischke et al., 1983). Credit worthiness estimates whether a borrower is likely to repay a loan, but because of the resulting selective nature of lending, a selective credit programme would not necessarily be expected to contribute to rural development. On the other

⁷ In the sense that a currency unit is fundamentally interchangeable with any other currency unit of the same value.

hand when credit worthiness tests are not applied, defaults are likely to increase (Von Pischke et al., 1983:9). High rates of default were exactly what followed in the wake of most of these credit programmes. Farmers were unable, and sometimes unwilling, to repay the loan. Many governments intervened with debt forgiveness programmes in order to lessen the hardship of poor and debt ridden farmers and credit became almost interchangeable with grants (Robinson, 2001).

Thirdly, supplying credit in advance would, according to theory, encourage farmers to adopt new technologies but it was becoming evident that much of the supplied technology was not appropriate for small-scale farmers. However, the impact of the credit programmes was not clear despite the huge investments made. Rather,

“in view of the large strides made by agriculture in developing countries, and the relatively small number of farmers who have received formal credit, it seems reasonable to conclude that most agricultural innovations in these countries have not depended directly on formal credit. The relation between innovation and credit has not been realistically viewed in part because credit tends to support large, lumpy investments in highly visible innovations such as tractors, as opposed to small, divisible investments in much more numerous and widely spread innovations such as improve seeds”(Von Pischke et al., 1983:7).

Finally, rural households and firms are heterogeneous, and their needs vary over time, but the programmes' exclusive focus on credit over other forms of financial services did not take that into account (Meyer and Alicbusan, 1984). Savings, for instance, was the “forgotten half of rural finance” (Vogel, 1984) because it was assumed that the rural poor had neither the means nor the wish to use such services.

By the 1980's, the failings of the credit and subsidy-heavy supply-led financing approach became too obvious to ignore. Credit programmes were not geared towards the realities of rural markets or social and political issues facing the poor. Nevertheless, despite the criticism, countries such as India, China and Pakistan have been continuing with state run subsidized credit programmes to the present day, most plausibly because, as Blair (1984) noted 25 years ago, politics (and the possibility of using subsidised credit as a political tool) is the main reason for its popularity.

3. Market Based Approaches and Demand-led Models

New approaches emerged in the 1980s, resulting in a paradigm shift in rural finance away from the narrow focus on rural credit to emphasising a broader view of the financial system (Robinson, 2001). The change was led by the Rural Finance Programme at Ohio State University which created the Rural Financial Markets approach, summarised in two important collections of essays on rural finance edited by Von Pishcke et al. (1983) and Adams et al. (1984). The new paradigm was based on a changed and broader attitude towards informal financiers, mobilising savings and extending financial services beyond farm credit, to non farm activities and, in line with general development policy at the time, a more market driven approach where market

forces would be expected to allocate financial services (Adams et al., 1984:229, Gonzalez-Vega, 1994). Additionally, there was a strong belief in competitive local informal financial markets and their ability to provide adequate access to finance. In fact, it was an almost complete turn-around on the 'evil moneylender' assumption, believing instead that informal financial institutions and markets could adequately support the rural poor (Robinson, 2001) and should be left to themselves. Furthermore, the World Bank further discussed rural financial markets in several important articles and books in the 1990's including Von Pischke, (1991), Hoff et al., (1993), Benjamin and Yaron, (1997), all stressing an enabling environment and removing policies biased against rural markets in line with the prevailing Washington Consensus. These authors called for governments to correct market failures through policy and regulatory reforms rather through the subsidy-based directed credit programmes.

Towards the mid 1990s, rural finance theory had moved towards demand-led models. Three separate but interrelated strands of financing theory particularly relevant to financing innovative entrepreneurs were emerging that both questioned the neo-classical view of economic development. One strand is the fashionable and currently much researched micro credit/micro finance approach. The other focuses on financial systems and innovation. Lastly since the start of the new millennium, work on financial access and inclusion has become increasingly popular.

3.1. Micro Credit and Microfinance

Micro credit and later microfinance emerged in the 1980's to provide small amounts of credit for the rural poor, treating them as customers and expecting regular, and full, repayment, including interest. Microfinance thus emerged as a response to the continual failure of financial services to reach the poor. Reasons for this failure include the insistence on collateral for credit, information asymmetry between lenders and borrowers, the high transaction costs of administering small savings and loans and a failure to reach out to the poorest. For the past 20 years microfinance has grown rapidly and in 2001 Robinson wrote on the Microfinance Revolution and sustainable micro finance provision as the key to sustainable services for the poor.

Various forms of microfinance exist. Bangladesh predominantly uses Grameen's "joint liability" model where small groups are formed where each member is required to act as a guarantor of the other members of the group in case of loan default. India on the other hand use a different group model based on larger Self-Help-Groups (SHG) where credit is lent to a self-formed village group of prevalently women who then administer the loan within the group. SHG's have been linked with rural banks⁸, resulting in the "SHG-bank-linkage model" which has become enormously popular among Government and Apex institutions as the main

⁸ Which is an extension of this model where the SHG-bank linkage models create links between banks, NGO's and the local SHG groups and are widely supported by the state (Basu & Srivastava '05) and apex institutions. It is much more common than any other model such as those inspired by the Bangladeshi Grameen model or commercial MFI's (Basu & Srivastava '05). A reason for the strong prevalence and popularity of the SHG model is that it relies on the already existing rural banking system which was already well built up in rural areas (Basu & Srivastava '05).

mechanism for providing finance for the rural poor. Thirdly, apart from group lending, some microfinance organisations offer individual loans. Whilst the Grameen and SHG models often rely on government subsidised credit for on-lending, models such as Latin American MFI's Banco Sol and Bank Compartimos, rely on for profit investments and savings.

However, micro finance, in particular micro credit, has also been criticised for not having a clear and sustainable impact among the poor (Morduch, 1998, Morduch, 1999) and several impact evaluation have substantiated this belief (Banerjee et al., 2009, Morduch, 1998, Pitt and Khandker, 1998). One problem with the credit provided to small-holders is that it is often too small to be used for the intended purpose such as buying healthy animals. Instead it is common for loans meant for productive purposes to be spent on household consumption (Birdar and Jayasheela, 2000) such as a new roof or family events including funerals and weddings. In fact, Banerjee, Duflo et al. (2009) find, through a randomized trial, that micro credit has little impact on the investment practices and business income of those micro entrepreneurs that did not already possess a functioning business at the time of loan disbursement, who chose instead to use the credit for consumption, whilst those entrepreneurs that already had a business were more likely to use the extra credit for business expansion purposes.

“While microcredit “succeeds” in affecting household expenditure and creating and expanding businesses, it appears to have no discernible effect on education, health, or women’s empowerment” (Banerjee et al., 2009:21).

This highlights another problem with microfinance, that it rests on the faulty assumption that all poor are willing, and able to be entrepreneurs.⁹

Nevertheless, a major point that microfinance has proved, is that the poor are reliable bank customers. Microfinance has thereby opened up financing for a new section of society, and using women, rather than men as clients in order to minimise the diversion of funds (Robinson, 2001). A number of other important issues regarding the provision of finance for the poor has been highlighted by the microfinance movement.

Firstly, microfinance organisations are flexible in their approach to collateral. Whilst banks rely on assets as collateral to recover any potential loan default, effectively cutting off a large share of the population because of a lack of assets and/or a lack of adequate property right laws, microfinance takes a different approach, seeing collateral as a deterrent instead (Cull et al., 2006). Therefore they can take non-monetary or land assets that would not necessarily repay a defaulted loan, but would be important enough to the borrower to act as a deterrent to default on the loan (Cull et al., 2006).

Secondly, group lending has a number of risk mitigating qualities, which can importantly be used as a substitute for collateral.¹⁰ Peer selection acts as a screening method when forming groups, peer pressure enforces repayments whilst peer monitoring within the group reduces risk-taking behaviour (Morduch, 1999). Nevertheless, today microfinance is

⁹ As was noted above, most poor are entrepreneurs out of necessity, not will, and often operate at subsistence level, not being able (or have the means) to sustain a profitable business.

¹⁰ Collateral is a major barrier to access to finance for the poor since the poor generally lack assets that can be used as collateral.

seeing a steady shift towards individual lending and bilateral contracts (Morduch and Armendariz, 2004). Individual loans tend to be much larger than group loans. These loans are provided for the relatively less poor, generally for investment in larger business opportunities where group lending mechanisms would quickly become unmanageable (Cull et al., 2006). Lending larger amounts to the relatively better off can potentially lead to better sustainability than lending smaller amounts to poorer clients (Cull et al., 2006). Though, organisations providing such loans have been accused of mission drift. This is an argument closely related to the debate between those believing that microfinance is first and foremost a social activity, as advocated by Mohammad Yunus of Grameen Bank (Yunus, 1999), and those who see it as a 'bottom/base of the pyramid' business opportunity (Prahalad, 2006) like the Mexican microfinance provider Banco Compartamos that went public in 2007, making substantial profits by charging very high interest rates (Morduch et al., 2009).¹¹

Thirdly, both individual and group models of microfinance use a progressive lending approach, building up a relationship and trust. By starting a borrower-lender relationship with small amounts of credit which grow larger on each successful repayment, there are dynamic incentives at work to encourage repayment. The repetitive nature of interaction overcomes information asymmetries as well as inefficiencies for both lenders and borrowers (Morduch, 1999). Furthermore, the regularity of repayments, which start soon after the loan is effective, often on a weekly basis, and in very small amounts, means that there are early warning signs on emerging problems and potential defaulters. In addition the lending agency does not have to rely on the ability of the client to save up the amount over time. Nevertheless, demanding repayments soon after disbursement means that clients need to have a second income to cover the repayment (Morduch, 1999). Christen (1997) concludes from a manual on microfinance based on a survey of the MFI ACCION's operations in South America that

"repayment depends fundamentally on factors within the control of the lending institutions"

and highlight in particular the need for

"clear repayment expectations, administrative efficiency and the development of close, almost personal, relationships with clients" (Christen, 1997:16).

Client-lender relationships are important in successful microfinance organisations, using these to mitigate risks by monitoring the lender and/or investment and by acquiring information that can flag potential problems early.

Fourthly, some microfinance organisations not only form a closer relationship with their clients but also provide them with support in addition to credit. One important service is the ability to save. Whilst compulsory savings has often formed part of the initial pre-credit microfinance progressive lending strategy, there is now a move towards voluntary savings separate from credit provision (Morduch and Armendariz, 2004). Furthermore, whilst micro credit has focussed solely on the provision of debt finance, many microfinance organisations

¹¹ The interest rates were as high as 94% once 15% value added tax had been included, according to Morduch (2009), though Banco Compartamos argued that this was still substantially lower than what informal moneylenders would offer.

offer non-financial services such as business and accounting practices, education and health provision. This has resulted in a second debate between those that believe that credit alone is sufficient in order to provide the poor with the means to take themselves out of poverty, and those that believe that the poor do not necessarily maximise their profits by the simple provision of credit. Therefore, the latter camp argues, credit would be much more efficient, in maximising profits, if accompanied by business support. The former is highlighted by Yunus who states that since all humans have the basic skill to survive, and the poor in particular show proof of this skill,

“they do not need us to teach them how to survive; they already know. So rather than waste our time teaching them new skills we (the Grameen Bank) try to maximise use of their existing skills. Giving the poor access to credit allows them to immediately put into practice the skills they already know” (Yunus, 1999:140).

The latter view, as supported by Morduch, Robinson and Karlan (Karlan et al., 2008, Morduch and Armendariz, 2004, Robinson, 2001) questions the ability of credit on its own to have an impact. Credit alone can not increase incomes and standards of living in the rural sector for entrepreneurs without a supportive environment which facilitates market access and help build a sustainable business. Credit is, according this view, one of several interlinked parts of poverty, with healthcare and education playing a large role, and therefore an integrated approach of credit as well as other services may be more suitable to rural development (Cull et al., 2006, Helms, 2006). In fact, Karlan and Valdivia (2008) note that an increasing number of MFI's now invest in human capital as well as financial capital. They undertake an impact evaluation of a programme in Peru providing credit for female micro entrepreneurs through randomized control trials to assess the impact of business support in addition to credit. 144 banks with a total of 3265 clients were participating in the evaluation and divided into three groups: a treatment group (55 banks, with mandatory non-financial support), a voluntary treatment group (34 banks, where clients could choose whether to participate or not) and a control group (51 banks) that were supplied credit only. A baseline survey was carried out early 2003 with a follow up survey which reached approximately 80% of those in the base line survey, in the middle of 2005. The authors find limited proof that general, non-customised business support training does have a positive impact on business knowledge as well as revenues and profits, and increases customer retention rates for MFI's. For instance, business profits during the low season increased by an average of 33% for those that had attended more than eight training sessions and the effects of these training sessions on profits was significant. A shift in the direction of more integrated and holistic services is taking place with MFI's moving towards a wider livelihood-oriented view of finance and non-financial support, including business and livelihood support services as well as insurance. In India, for instance, MFI-insurance linkage programmes are currently widely supported by the state (Basu et al., 2005).

This newer generation of microfinance organisations is, in fact, working in ways closely resembling those propagated by the research on financial systems, as well as financial access, topics that the next two sections will discuss.

3.2. Financial Systems and its Impact on Innovative Activities

The way a financial system is set up has an impact on the financial institutions and flows within it. Creating financial institutions that are able to accumulate and diffuse knowledge is a way to bridge the information gap and deal with risks and uncertainties. The institutional set-up of the financial system in different countries may support or hinder the innovation process.

In one attempt to locate the importance of finance within innovation systems, Christensen (1992) analyses the role of finance within national systems of innovation, focussing mainly on external as opposed to internal financing of firms. He recognises availability of finance as one of the most important conditions in the innovation process. Such factors can vary across nations' financial systems and can affect firms and their ability to invest in new technology and innovation activities (Christensen and Lundvall, 1992:146). The financing of the innovative activities of domestic technology firms has been studied through three main angles: firstly, the financing issues of R&D; secondly, the financing of new technology-based firms and why there is an apparent financing gap; and thirdly, a focus on specific financial instruments such as venture capital and its impact on innovation (Bartzokas and Mani, 2004; Hall, 2002). Christensen (1992) finds that institutional differences in national finance systems have serious implications for how innovation is financed (Christensen and Lundvall, 1992; Kiggundu, 2006).¹² The literature on financial systems has generally focussed on comparison between different countries' systems and their perceived effectiveness in encouraging economic growth. Such studies have shown that industries that are more dependent on external finance grow faster in more developed financial markets (Rajan and Zingales, 1998) and that the economic impact of the financial system may be visible at the national level through the rates of economic growth. Studies in number of countries that have compared different sectors performance in relation to access to finance found that that sectors with preferential treatment from a country's financial system are likely to do better (Beck et al., 2000; Carlin and Mayer, 2003; Demirgüç-Kunt and Maksimovic, 2002; O'Sullivan, 2004). Bank and market based financial systems may affect the innovation process differently. Allen and Gale (2000) in a book length review comparing the capital market heavy economies of the UK and the US with the bank based economies of Germany and France note that where great new inventions and industries are launched the stock market tend to be well developed and provide the required finance, whilst when the industry already exists and it is a matter of building up an industry or incremental innovation, financial intermediaries may be better suited to supply finance.¹³ Nevertheless, Beck et al. (2008) has since suggested that bank versus market discussion is no longer as relevant a discussion as most countries opt for a system that combines elements of the two.

¹² Other studies on the national system of innovation and finance include OECD (1993, 1996); Prakke (1988), who studied the financing of technological innovation.

¹³ Their argument is that when a new technology or industry is launched where there is a great deal of risk but little prior information which results in a great diversity of opinion, the market is better placed to provide finance because at least some projects will be financed because there will be somebody in the market willing to do so. On the other hand, in a bank based system the process of acquiring information becomes cheaper but the diversity of beliefs on whether a project is good or bad means that investors may withhold funding because a bank may choose to support a project they do not believe in.

A well-functioning financial system is essential for innovation since it promotes entrepreneurship in non-financial sectors, Bhatt (1995) argues in a comprehensive review on financial systems, innovation and economic development. Furthermore, the financial system's ability to innovate affects its ability to react changing and new challenges and needs for financial products, services and institutions from the non-financial sector. Financial innovation includes:

“new financial instruments, new decision processes and criteria, cultivation of new markets for financial instruments, new organisational and managerial practices and new institutions” (Bhatt, 1995:9).

Frame and White (2004) in a review of empirical studies on financial innovations¹⁴, have more formally defined financial innovation as

“representing something new that reduces costs, reduces risks, or provides an improved product/service/instrument that better satisfies participants' demands” (Frame and White, 2004:118).

Such financial innovation affects the access to the financial system as well as the efficiency and effectiveness with which the system supports PEBI.

Bhatt (1995) analyses three distinct types of financial systems and their propensity to innovate, the German, Japanese and Indian banking systems, to show how systemic innovation can reduce transaction costs and risks in the system. Rather than focussing on market versus bank based models (Allen and Gale, 2000), Bhatt looks to understand how different bank based systems, that are closer to what could reasonably be expected to exist in developing countries, emerged and what role innovation plays within them. In Germany, and most of continental Europe, a “universal banking system” emerged, which combines commercial banking with investment banking in order to provide a wider range of services than would be available if the banks were specialized in either commercial or investment activities.¹⁵ Japan further built on this system after the Second World War, resulting in the “main banking system” which was built up around a very close relationship between borrower and lender in order to reduce risks and align goals, through for example establishing informal and formal information channels and emphasizing short-term loans to build up mutual trust and knowledge. The main bank system played a central role in the rapid recovery and industrialisation of Japan post WWII. India, meanwhile, evolved a “lead bank system” influenced by the Japanese system in the 70's, where the lead development banks take charge of appraising, approving and monitoring projects or clients, often, as is clearly visible in the Indian case, through excessively bureaucratic and rigid methods (Bhatt, 1995). Bhatt (Bhatt, 1995) concludes his review on financial systems

¹⁴ The authors group financial innovation in similar manner to Bhatt (1995), as new products such as adjustable-rate mortgages, new services like online banking, new production processes as in credit scoring and new organisational forms such as new types of banks like internet only banks.

¹⁵ Bhatt (1995) emphasizes that the most relevant German bank system was that which existed at the end of the 19th century when banks “performed more effectively all the main bank functions and , in addition, performed the entrepreneurial role that is so relevant for developing and transforming economies” (1995:100).

by suggesting that the Japanese main bank system that existed in the post WWII years most closely resembles the challenges facing developing countries today.

In a review of literature on financing the process of innovation, with respect to the fishing sector in Uganda, Kiggundu (2006) suggests that

“given the circumstances in which developing country firms operate, it might be the case that the usefulness of the main-bank arrangement is not so much in the multiplicity of services it provides, but rather in the pressures and incentives it places upon lenders to support the upgrading efforts of firms. That is, such mechanism not only inspires lenders to attend to upgrading and growth requirements of firms, but also dissolves costs and risks inherent in loan contracts that would ordinarily be too unsafe or too costly to make” (Kiggundu, 2006:28).

In fact, rather than simply screening and appraising project proposals, a bank in this type of system takes a pro-active role in “handholding new firms providing entrepreneurial and managerial guidance” as well as linking up with other institutions that can provide them with expertise appraisal, technology, suppliers and decisions related to strengthening the innovation process.

A financial system may have finance flowing inside it, but entrepreneurs can still have problems accessing funding. A recent literature, much of which has come from the World Bank, has been looking at issues of financial access and inclusion, and concluded that the poor, especially the rural poor, have little access to finance. This is what the next section goes on to look at in greater detail.

3.3. Financial Access and Inclusion

The current interest in access to finance and financial institutions and markets can be partially traced back to a World Bank attempt to establish more rigorous data on financial systems, their structure and development (Beck et al., 2000). A number of papers and reports in recent years have further evolved the analysis and application of such work including Demirguc-Kunt et al. (2008); Beck and Demirguc-Kunt (2008); Beck and de la Torre (2007); Beck, Demirguc-Kunt and Maksimovic (2004). These authors have analysed financial access of the poor and of firms in developing countries, as well as the impact of financial access on economic development and growth and will be explored in more detail below. Another set of authors has studied financial inclusion including Helms (2006) who focussed on microfinance and the inclusiveness of financial systems in developing countries; Basu (2006); Basu and Srinavasta (2005) on financial inclusion in India¹⁶; Kumar and Beck (2005) on the inclusion of the bank system in Brazil; and Tejerina (2006) who looked more generally at financial inclusion in Latin America and the Caribbean. This set of literature notes a clear link between developed financial systems and economic development and growth. For instance, finance often has an indirect effect on poverty alleviation as access to better finance for non-poor entrepreneurs results in more work and better wages for the poor (Beck and Demirguc-Kunt, 2008; Demirguc-Kunt et al., 2008). Furthermore, access to finance promotes start-ups and small entrepreneurial firms that are

¹⁶ Financial inclusion and access in India will be thoroughly discussed in chapter 4.

thought to innovate more than other firms according to Beck and Demirguc-Kunt (2008) who summarised recent literature on measuring and analysing access to finance.

Access to finance is not the same as use of finance (Claessens et al., 2009). In terms of demand and supply, the use of finance is the intersection of demand and supply whilst the access to finance is shown along the supply curve. Three groups can thus be distinguished. The first group has access and does use financial services whilst the second group has access but chooses not to use financial services. The third group has no access and therefore cannot use financial services (Claessens, 2005).¹⁷ The voluntary non-users of financial services may start using services if the relative price of such services decreases. Those lacking financial services may be excluded because of high barriers.

Demirguc-Kunt et al (2008) review research on access and barriers to finance using household and firm level data from previous research whilst Beck, Demirguc-Kunt and Peria (2006a) empirically investigates barriers to access, using information from 193 banks in 58 countries to develop indicators of physical access, affordability and eligibility barriers to savings, debt and payment services. Both studies note that main barriers include geographical distance as well as lack of adequate documentation and high fees and minimum account balance (Beck et al., 2006a; Demirguc-Kunt et al., 2008). Furthermore, Peachey and Roe (2006) who analysed the results of two empirical studies on access to finance and savings across developing countries for the World savings Institute, found that constraints to access can in addition be caused by bank's weak coverage of rural areas, by an unwillingness on the part of commercial banks to focus on rural and SME business; and by a lack of sustainable financial practices by many MFI's. Beck and de la Torre (2007) also highlight geographical limitations whilst further stressing socio-economic limitations which excludes certain income, social or ethnic groups due to costs, financial illiteracy or discrimination (Beck and de la Torre, 2007:82). Finally there are limitations of opportunity where potential investments with good prospects are denied finance because of a lack of collateral or network (ibid, 2007:82).

The issues related to access to finance are due to transaction costs, agency costs and uncertainty according to Beck and de la Torre (2007) who provide a theoretical framework that uses 'access possibilities frontier' to study supply and demand constraints. The financial market and institutions exist to deal with these costs and uncertainties. Therefore, the nature of the system affects the way institutions are able to deal with a lack of access (Beck and de la Torre, 2007). The authors create a new conceptual framework to help identify 'bankable and banked' populations by defining an 'access possibilities frontier' of financial access. The authors find that the problem of access occurs where 1) an economy settles below the frontier and therefore excludes potential customers; 2) the possibilities frontier is too low in comparison to other countries in a similar situation; and 3) where imprudent lending leads to excess credit beyond

¹⁷ Claessens (2005) is a review of evidence of the importance of finance using literature as well as aggregate indicators across developing countries. The underlying data are from LSMS and Finscope surveys. The Living Standard Measurement Survey (LSMS) is a World Bank survey that includes finance data in Ghana for instance, whilst Finnish Finmark has undertaken Finscope surveys on financing arrangements of households in Africa. Another major survey that is not used in this paper is, those by IADB that has included financial data in their Measurement of Living Conditions in Latin Maerica & the Caribbean (MECOVI) (Kneiding, 2009).

the constrained optimum. Because of scale economies and network externalities, access problems as outlined above, are particularly relevant to small transactions, small financial institutions and markets of a small size (Beck and de la Torre, 2007). In fact, a major reason there is little finance available for firms is the small absolute size of banking markets in many developing countries, which constrains the access to finance for firms, according to Peachey and Roe (2006).

Access to finance, especially among smaller and start-up firms promotes innovation since small firms often do not have adequate internal financial resources (Demirguc-Kunt et al., 2008). It follows that,

“the availability of actual finance is positively associated with the number of *start-ups* - an important indicator of entrepreneurship- as well as with firm dynamism and *innovation*” (Demirguc-Kunt, Beck et al. 2008:60; italic in original).

In fact, financing constraints reduce firm growth by 10% for small firms but only 6% for large firms, confirming that small firms are more adversely affected by a lack of financial access (Beck et al., 2006c). A survey on worldwide financial patterns that used a data from 48 countries on formal and informal banking, leasing and supplier (trade) finance notes that small firms located in countries with weaker financial systems use less external finance and especially bank credit compared to other countries (Beck et al., 2004). The authors further make three important points. Firstly, property rights are particularly important for small firms as regards access to finance. Secondly, small firms use a lower proportion of formal external sources for their finance requirements, instead relying to a larger extent on informal finance. Thirdly, small firms actually rely significantly less on government and development sources of finance compared to larger firms, which is surprising considering such programmes usually highlight their small firm and developmental credibilities. Small firms thus face considerable financial constraints (Beck et al., 2004).

Reasons for these access constraints, according to a review on recent research on access to finance and household and firm level data by Demirguc-Kunt, Beck and Honohan (2008) include a lack of appropriate products and services for micro enterprises, the affordability of those product and services as well as the lack of documentation that customers hold.

The impact of making finance available for non-poor rural firms and entrepreneurs is therefore likely to be significant on the rural poor:

“existing evidence suggests that indirect, second round effects through more efficient product and labour markets might have a greater impact on the poor than direct access to finance” (Demirguc-Kunt et al., 2008:11).

On the supply side, a number of different types of surveys and analysis have been undertaken on financial institutions¹⁸ (such as Helms (2006) on inclusive financial services for the poor), and in particular those focussing on banks, like Beck, Demirguc-Kunt and Peria (2006a), on banking services for everyone, and Peachey and Roe (Peachey and Roe, 2006) which focussed on saving bank characteristics, as well as Djankov (2007) that compared credit access in 127 countries. An

¹⁸ See Kneiding, 2009 for an overview of financial access related surveys and empirical research and Honohan (2008) for household access analysis.

early survey was Christen (2004) which looked at bank access for the poor, in particular focussing on microfinance as financial institutions with a double bottom line approach. Composite studies of demand and supply factors, using estimates for over 160 countries, have been undertaken by Honohan (2008) that looked at financial assets of households and its link to development; Kumar, (2005) who looked at Brazil's financial system and how inclusive the system is; and Basu (2006) who focussed on demand and supply factors within India's financial system.

Finally, reviewing a number of surveys and research, Beck, Demirguc-Kunt and Peria (2006a) note four reasons in the literature for the importance of access to financial services for small firms. Firstly, financial market imperfections are likely to hit smaller firms harder (Beck et al., 2006b; Levine, 2004). Secondly, new firm entry, as mentioned above, has a clear impact on economic growth and access to finance provides more opportunities for new firm formation (Klapper et al., 2006). Thirdly, access to finance can act as an incentive to spur knowledge creation (King and Levine, 1994). Fourthly, access to finance, according to Peachey and Roe (2006) should be considered as a basic need alongside the provision of health, education and water.

4. Discussion and Concluding Remarks

This review of literature on financing pro-poor innovation and entrepreneurship showed that financial theories which have moved from the linear supply-led subsidised credit theories towards a systems perspective where a number of factors impacts on the financial system as a whole and the provision of finance. It found that there is an evident gap in financing and financing theory regarding innovative entrepreneurs and small firms.

Despite much of mainstream finance still being caught between the old supply-led theories of subsidised credit and the newer micro credit focus which also to a large extent function on subsidised credit, there is a decisive recent shift towards new thinking on how, and what kind of, finance needs to be provided.

These new approaches recognise that supply-led agriculture-focussed credit is out of date. Not least because a majority of rural poor are landless poor and the sector that is likely to have the largest poverty alleviating impact is the non-farm sector and its entrepreneurs and small enterprises. Instead new demand-led approaches developed which took a systemic view of finance and financial markets. One that in particular focussed on the poor rural clients was micro credit and later microfinance, which highlighted the rural poor as 'bankable' and credible clients. Nevertheless, despite the huge popularity of micro credit and microfinance questions are being asked as to the impact such financing arrangements are actually having. Impact evaluations across many countries have failed to provide decisive evidence in favour of microfinance. In addition, it is becoming clear that micro credit certainly does not support small-scale firms or innovative growth focussed entrepreneurs beyond the micro-entrepreneurs that are best classified as necessity entrepreneurs, often operating at subsistence level.

On the other hand, the literature on financing innovation has tended to focus on the system as a whole, and the relative merits of a bank of market based financial system. More

recently, a financial literature focussed on financial markets, access and inclusion in developing countries has emerged, mainly from research undertaken at the World Bank. This financial access and inclusion literature highlights the financing gap through empirical investigations. It highlights the need for increased flexibility in financial arrangements as well as a shift in focus towards innovative entrepreneurs and enterprises in rural areas. This literature has noted that small firms and entrepreneurs have significant problems in accessing finance. Restricted access to finance for entrepreneurs can be traced to transaction costs, agency costs and uncertainty.

Future research should further build on the access and inclusion literature to more explicitly analyse what obstructs the access to finance, especially for pro-poor entrepreneur-based innovation in rural areas and how these barriers can be overcome.

References

- Adams, DW, Graham, DH and von Pischke, JD (eds.) (1984) *Undermining Rural Development with Cheap Credit*, Boulder, Colorado: Westview Press
- Allen, F and Gale, D (2000) *Comparing Financial Systems*. Cambridge, MA: MIT Press
- Banerjee, A, Duflo, E, Glennerster, R and Kinnan, C (2009) The miracle of microfinance? Evidence from a randomized evaluation. *Research into Action Working Papers*. Cambridge, MA: Abdul Latif Jameel Poverty Action Lab, MIT
- Bartzokas, A and Mani, S (2004) *Financial systems, corporate investment in innovation, and venture capital*. Cheltenham: Edward Elgar Pub.
- Basu, P (2006) *Improving Access to Finance for India's Rural Poor*. Washington D.C.: The World Bank
- Basu, P, Srivastava, P (2005) *Scaling-up microfinance for India's rural poor*. Washington, D.C.: World Bank South Asia Region Finance and Private Sector Development Unit
- Beck, T and de la Torre, A (2007) The basic analytics of access to financial services. *Policy Research Working Paper Series*. Washington: The World Bank
- Beck, T, Demirguc-Kunt, A and Peria, MSM (2006a) Banking Services for Everyone? Barriers to Bank Access and Use around the World. *World Bank Policy Research Working Paper*. World Bank
- Beck, T and Demirguc-Kunt, A (2008) Access to Finance: An Unfinished Agenda. *The World Bank Economic Review* 22: 383-396
- Beck, T, Demirgüç-Kunt, A and Levine, R (2006b) Bank supervision and corruption in lending. *Journal of Monetary Economics* 53: 2131-2163
- Beck, T, Demirguc-Kunt, A and Maksimovic, V (2004) Bank Competition, Financing and Access to Credit. *Journal of Money, Credit and Banking* 36: 627-648
- Beck, T, Demirgüç-Kunt, A and Maksimovic, V (2006c) The influence of financial and legal institutions on firm size. *Journal of Banking & Finance* 30: 2995-3015
- Beck, T, Levine, R and Loayza, N (2000) Finance and the sources of growth. *Journal of Financial Economics* 58: 261-300
- Benjamin, MP, Yaron, J and Piprek, GL (1997) *Rural finance: issues, design, and best practices*. Washington, D.C.: World Bank
- Bhatt, VV (1995) *Financial systems, innovations and development*. New Delhi ; London: Sage
- Birdar, RR and Jayasheela (2000) Rural finance : A village study. *Kurukshetra* 48: 19-25
- Blair, HW (1984) Agricultural Credit, Political Economy and Patronage. In W. Adams, D, Graham, DH and Pischke, JDV (eds) *Undermining Rural Development with Cheap Credit*. Boulder, Colo: Westview Press
- Carlin, W and Mayer, C (2003) Finance, investment, and growth. *Journal of Financial Economics* 69: 191-226
- Christen, RP (1997) Banking Services for the Poor: Managing for Success. ACCION International
- Christen, RP, Jayadeva, V and Rosenberg, R (2004) Financial Institutions with a Double Bottom Line: Implications for the Future of Microfinance. *Occasional Paper* Washinton DC: CGAP

- Christensen, JL and Lundvall, B-A (1992) The Role of Finance in National Systems of Innovation. *National systems of innovation: Towards a theory of innovation and interactive learning*. (pp 146-168). London: Pinter; distributed in the U.S. and Canada by St. Martin's Press, New York
- Claessens, S (2005) Access to financial services: a review of the issues and public policy objectives. *Policy Research Working Paper Series* Washington: The World Bank
- Claessens, S, Demirgüç-Kunt, A and Moshirian, F (2009) Global financial crisis, risk analysis and risk measurement. *Journal of Banking & Finance* 33
- Cull, R, Demirguc-Kunt, A and Morduch, J (2006) Financial performance and outreach : a global analysis of leading microbanks. *Policy Research Working Paper Series*. Washington: The World Bank
- Demirguc-Kunt, A, Beck, T and Honohan, P (2008) Finance for All?: Policies and Pitfalls in Expanding Access. *World Bank Policy Research Report*. Washington: World Bank
- Demirgüç-Kunt, A and Maksimovic, V (2002) Funding growth in bank-based and market-based financial systems: evidence from firm-level data. *Journal of Financial Economics* 65: 337-363
- Djankov, S, McLiesh, C and Shleifer, A (2007) Private credit in 129 countries. *Journal of Financial Economics* 84: 299-329
- Edquist, C (1997) *Systems of innovation: technologies, institutions and organizations*. London: Pinter
- Frame, WS and White, LJ (2004) Empirical Studies of Financial Innovation: Lots of Talk, Little Action? *Journal of Economic Literature* 42: 116-144
- Freeman, C (1987) *Technology policy and economic performance: lessons from Japan*. London ; New York: Pinter Publishers
- Gonzalez-Vega, C (1984) Cheap Agricultural Credit: Redistribution in Reverse. In W. Adams, D, Graham, DH and Pischke, JDV (eds) *Undermining Rural Development with Cheap Credit*. Boulder, Colo: Westview Press
- Gonzalez-Vega, C (1994) Stages in the Evolution of Thought on Rural Finance: A Vision from the Ohio State University. *Economics and Sociology Occasional Paper*. Columbus: Ohio State University, Department of Agricultural Economics and Rural Sociology
- Hall, A, Clark, N, Sulaiman, R, Sivamohan, MVK and Yoganand, B (2003) From Measuring Impact to learning Institutional lessons: an innovation systems perspective on improving the management of international agricultural research. *Agricultural Systems* 78: 213-241
- Hall, BH (2002) The Financing of Research and Development. *Oxford Review of Economic Policy* 18: 35-51
- Helms, B (2006) *Access for all : building inclusive financial systems*. Washington, DC: World Bank
- Hoff, K, Braverman, A and Stiglitz, JE (1993) *The economics of rural organization: theory, practice, and policy*. New York: Published for the World Bank by Oxford University Press
- Honohan, P (2008) Cross-country variation in household access to financial services. *Journal of Banking & Finance* 32: 2493-2500
- Karlan, D, Valdivia, M and Frisanchio, V (2008) Business Training for Microfinance Clients: How it Matters and for Whom? *Cahiers de recherche PMMA*. PEP-PMMA

- Kiggundu, R (2006) Innovation systems and development : the journey of a Beleaguered Nile Perch Fishery in Uganda. *UNU-MERIT*. Maastricht: University of Maastricht
- King, RG and Levine, R (1994) Capital fundamentalism, economic development, and economic growth. *Policy Research Working Paper Series*. Washington DC: The World Bank
- Klapper, L, Laeven, L and Rajan, R (2006) Entry regulation as a barrier to entrepreneurship. *Journal of Financial Economics* 82: 591-629
- Kumar, A, Beck, T, Campos, C and Chattopadhyay, S (2005) Assessing financial access in Brazil *World Bank Working Papers*. Washington: the World Bank
- Lazonick, W (2005) The Innovative Firm. In Fagerberg, J, Mowery, DC and Nelson, RR (eds) *The Oxford handbook of innovation*. (pp 29-55). Oxford and New York: Oxford University Press
- Levine, R (2004) Finance and Growth: Theory and Evidence. *NBER Working Paper*. NBER
- Lingelbach, DC, De La Vina, L and Asel, P (2005) What's Distinctive about Growth-Oriented Entrepreneurship in Developing Countries? *Center for Global Entrepreneurship Working Paper* San Antonio, Texas: UTSA College of Business
- Lundvall, B-A (1992) *National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning*. London: Pinter
- Mellor, JW (1966) *The economics of agricultural development*. Ithaca: Cornell University Press
- Meyer, RL and Alicbusan, AP (1984) Farm-Household Heterogeneity and Rural Financial Markets: Insights from Thailand. In W. Adams, D, Graham, DH and Pischke, JDV (eds) *Undermining Rural Development with Cheap Credit*. Boulder, Colo: Westview Press
- Morduch, J (1998) Does Microfinance Really Help the Poor? New Evidence from Flagship Programs in Bangladesh. *Unpublished mimeo*.
- Morduch, J (1999) The Microfinance Promise. *Journal of Economic Literature* 37: 1569-1614
- Morduch, J and Armendariz, B (2004) Microfinance: Where Do We Stand? In Goodhart, C (ed) *Financial Development and Economic Growth: Explaining the Links*. Basingstoke, Hampshire, UK: Palgrave Macmillan
- Morduch, J, Cull, R and Demircug-Kunt, A (2009) Microfinance Meets the Market. *Journal of Economic Perspectives* 23: 167-192
- O'Sullivan, M (2004) Finance and innovation. In Fagerberg, J, Mowery, DC and Nelson, RR (eds) *Oxford handbook of innovation*. Oxford: Oxford University Press
- Patrick, HT (1966) Financial Development and Economic Growth in Underdeveloped Countries. *Economic Development and Cultural Change* 14: 174
- Peachey, S and Roe, A (2006) Access to finance, measuring the contribution of savings banks. *Working Paper*. World Savings Bank Institute
- Penny, DH (1968) Farm Credit Policy in the Early Stages of Agricultural Development. *Australian Journal of Agricultural Economics* 12: 32-45
- Pitt, MM and Khandker, SR (1998) The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter? *Journal of Political Economy* 106: 958-996
- Prahalad, CK (2006) *The Fortune at the Bottom of the Pyramid: eradicating poverty through profits*. New Jersey: Wharton School Publishing

- Rajan, RG and Zingales, L (1998) *The Governance of the New Enterprise. CRSP Working Papers*. Center for Research in Security Prices, Graduate School of Business, University of Chicago
- Robinson, MS (2001) *The microfinance revolution*. Washington, D.C. New York: World Bank ; Open Society Institute
- Schultz, TW (1964) *Transforming traditional agriculture*. New Haven ; London: Yale University Press
- Spielman, DJ (2005) *Innovation Systems Perspectives on Developing-Country Agriculture: A Critical Review. ISNAR Discussion Paper*. International Food Policy Research Institute
- Tejerina, L, Bouillon, CP and Demaestri, E (2006) *Access to Financial Services and Poverty Reduction in Latin America and the Caribbean*. Inter-American Development Bank
- UNDP (2004) *Unleashing Entrepreneurship: Making Business Work for the Poor*. New York: United Nations Development Programme
- Vogel, RC (1984) *Savings Mobilisation: The Forgotten Half of Rural Finance*. In W. Adams, D, Graham, DH and Pischke, JDV (eds) *Undermining Rural Development with Cheap Credit*. Boulder, Colo: Westview Press
- von Pischke, JD (1991) *Finance at the Frontier: Debt Capacity and the Role of Credit in the Private Economy*. Washington D.C.: The World Bank
- Von Pischke, JD, Adams, DW and Donald, G (1983) *Rural financial markets in developing countries : their use and abuse*. Baltimore ; London: Published for the Economic Development Institute of the World Bank by the Johns Hopkins University Press
- WB (2008) *World Development Report 2008- Agriculture for Development*. Washington: World Bank
- Yunus, M (1999) *Banker to the Poor: Micro-Lending and the Battle Against World Poverty*. New York: BBS Public Affairs

The UNU-MERIT WORKING Paper Series

- 2010-01 *Endogenous Economic Growth through Connectivity* by Adriaan van Zon and Evans Mupela
- 2010-02 *Human resource management and learning for innovation: pharmaceuticals in Mexico* by Fernando Santiago
- 2010-03 *Understanding multilevel interactions in economic development* by Micheline Goedhuys and Martin Srholec
- 2010-04 *The Impact of the Credit Crisis on Poor Developing Countries and the Role of China in Pulling and Crowding Us Out* by Thomas H.W. Ziesemer
- 2010-05 *Is there complementarity or substitutability between internal and external R&D strategies?* by John Hagedoorn and Ning Wang
- 2010-06 *Measuring the Returns to R&D* by Bronwyn H. Hall, Jacques Mairesse and Pierre Mohnen
- 2010-07 *Importance of Technological Innovation for SME Growth: Evidence from India* by M. H. Bala Subrahmanya, M. Mathirajan and K. N. Krishnaswamy
- 2010-08 *Economic Adversity and Entrepreneurship-led Growth: Lessons from the Indian Software Sector* by Suma Athreya
- 2010-09 *Net-immigration of developing countries: The role of economic determinants, disasters, conflicts, and political instability* by Thomas H.W. Ziesemer
- 2010-10 *Business and financial method patents, innovation, and policy* by Bronwyn H. Hall
- 2010-11 *Financial patenting in Europe* by Bronwyn H. Hall, Grid Thoma and Salvatore Torrisi
- 2010-12 *The financing of R&D and innovation* by Bronwyn H. Hall and Josh Lerner
- 2010-13 *Occupation choice: Family, Social and Market influences* by Ezequiel Tacsir
- 2010-14 *Choosing a career in Science and Technology* by Ezequiel Tacsir
- 2010-15 *How novel is social capital: Three cases from the British history that reflect social capital* by Semih Akcomak and Paul Stoneman
- 2010-16 *Global Players from Brazil: drivers and challenges in the internationalization process of Brazilian firms* by Flavia Carvalho, Ionara Costa and Geert Duysters
- 2010-17 *Drivers of Brazilian foreign investments – technology seeking and technology exploiting as determinants of emerging FDI* by Flavia Carvalho, Geert Duysters and Ionara Costa
- 2010-18 *On the Delivery of Pro-Poor Innovations: Managerial Lessons from Sanitation Activists in India* by Shyama V. Ramani, Shuan SadreGhazi and Geert Duysters
- 2010-19 *Catching up in pharmaceuticals: a comparative study of India and Brazil* by Samira Guennif and Shyama V. Ramani
- 2010-20 *Below the Radar: What does Innovation in Emerging Economies have to offer other Low Income Economies?* by Raphael Kaplinsky, Joanna Chataway, Norman Clark, Rebecca Hanlin, Dinar Kale, Lois Muraguri, Theo Papaioannou, Peter Robbins and Watu Wamae
- 2010-21 *Much ado about nothing, or sirens of a brave new world? MNE activity from developing countries and its significance for development* by Rajneesh Narula
- 2010-22 *From trends in commodities and manufactures to country terms of trade* by Thomas H.W. Ziesemer
- 2010-23 *Using innovation surveys for econometric analysis* by Jacques Mairesse and Pierre Mohnen
- 2010-24 *Towards a New Measurement of Energy Poverty: A Cross-Community Analysis of Rural Pakistan* by Bilal Mirza and Adam Szirmai
- 2010-25 *Discovery of the flower industry in Ethiopia: experimentation and coordination* by Mulu Gebreeyesus and Michiko Iizuka
- 2010-26 *CSR and market changing product innovations: Indian case studies* by Shyama V. Ramani and Vivekananda Mukherjee

- 2010-27 *How firms innovate: R&D, non-R&D, and technology adoption* by Can Huang, Anthony Arundel and Hugo Hollanders
- 2010-28 *Sure Bet or Scientometric Mirage? An Assessment of Chinese Progress in Nanotechnology* by Can Huang and Yilin Wu
- 2010-29 *Convergence of European regions: a reappraisal* by Théophile T. Azomahou, Jalal El ouardighi, Phu Nguyen-Van and Thi Kim Cuong Pham
- 2010-30 *Entrepreneurship and the National System of Innovation: What is Missing in Turkey?* by Elif Bascavusoglu-Moreau
- 2010-31 *Keeping the eclectic paradigm simple: a brief commentary and implications for ownership advantages* by Rajneesh Narula
- 2010-32 *Brazilian Aerospace Manufacturing in Comparative Perspective: A Brazil/USA Comparison of Output and Productivity* by Daniel Vertesy and Adam Szirmai
- 2010-33 *Economic restructuring and total factor productivity growth: Tunisia over the period 1983-2001* by Sofiane Ghali and Pierre Mohnen
- 2010-34 *Impact of government support on R&D and innovation* by Abraham Garcia and Pierre Mohnen
- 2010-35 *Product, process and organizational innovation: drivers, complementarity and productivity effects* by Michael Polder, George van Leeuwen, Pierre Mohnen and Wladimir Raymond
- 2010-36 *Entrepreneurship Development and the Role of Economic Transition in Entrepreneurial Activities in China* by Ying Zhang and Geert Duysters
- 2010-37 *Pro-Poor, Entrepreneur-Based Innovation and it's Role in Rural Development* by Lina Sonne
- 2010-38 *Financing pro-poor entrepreneur-based innovation: A review of existing literature* by Lina Sonne